

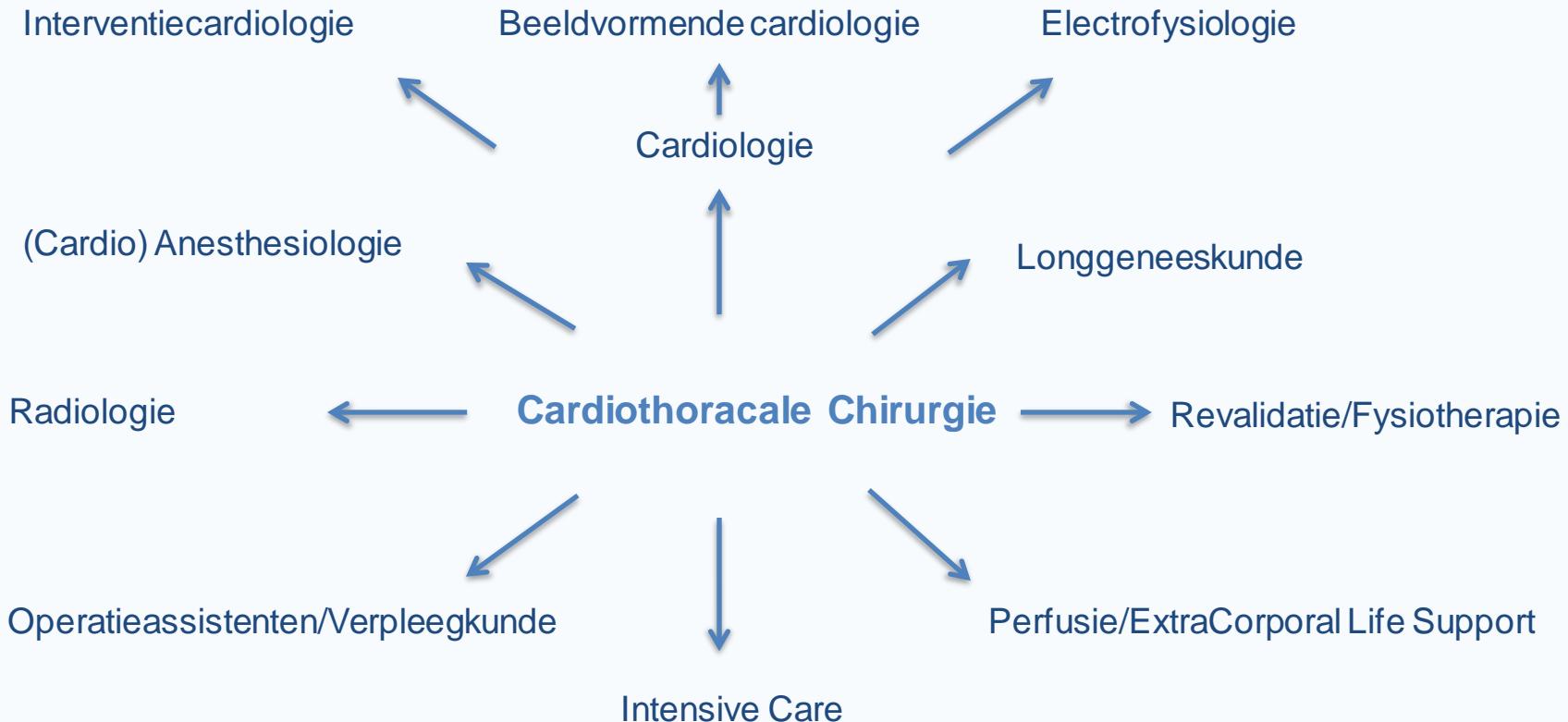
Longkanker Nederland

Chirurgie

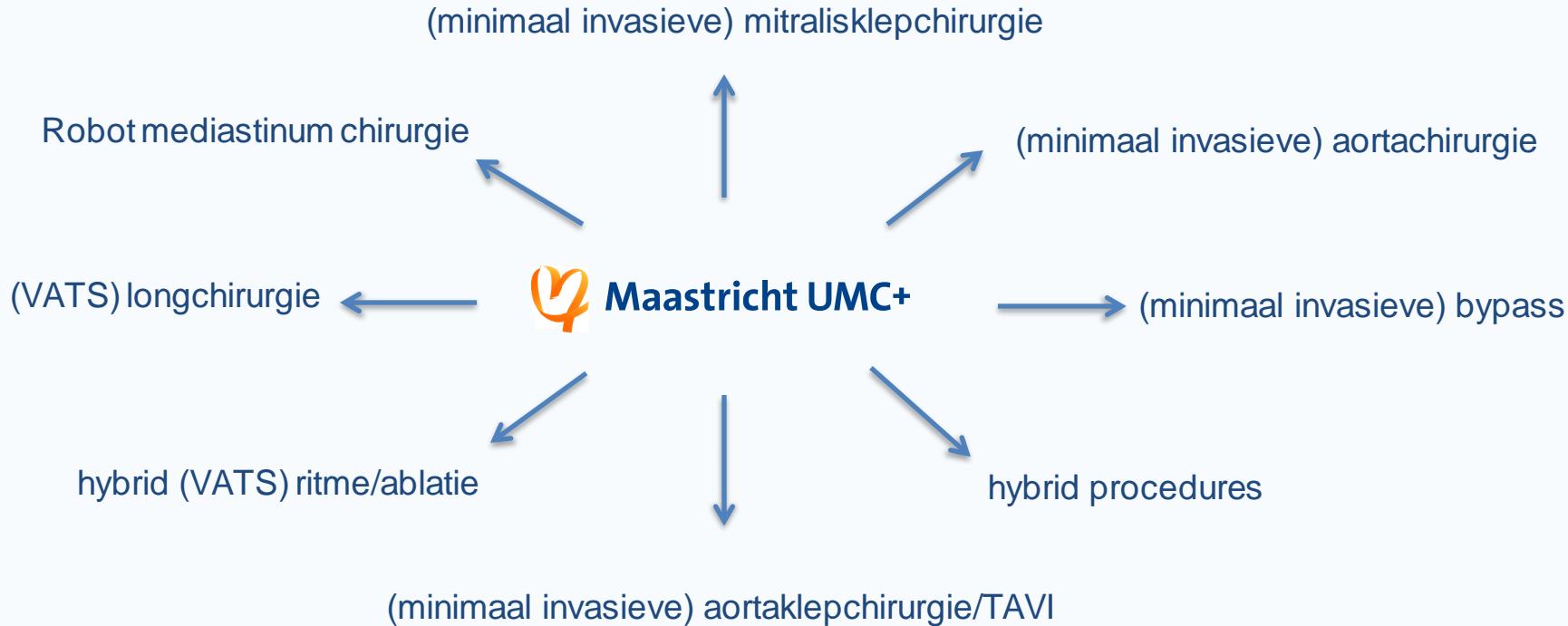
P.Segers, MD, PhD

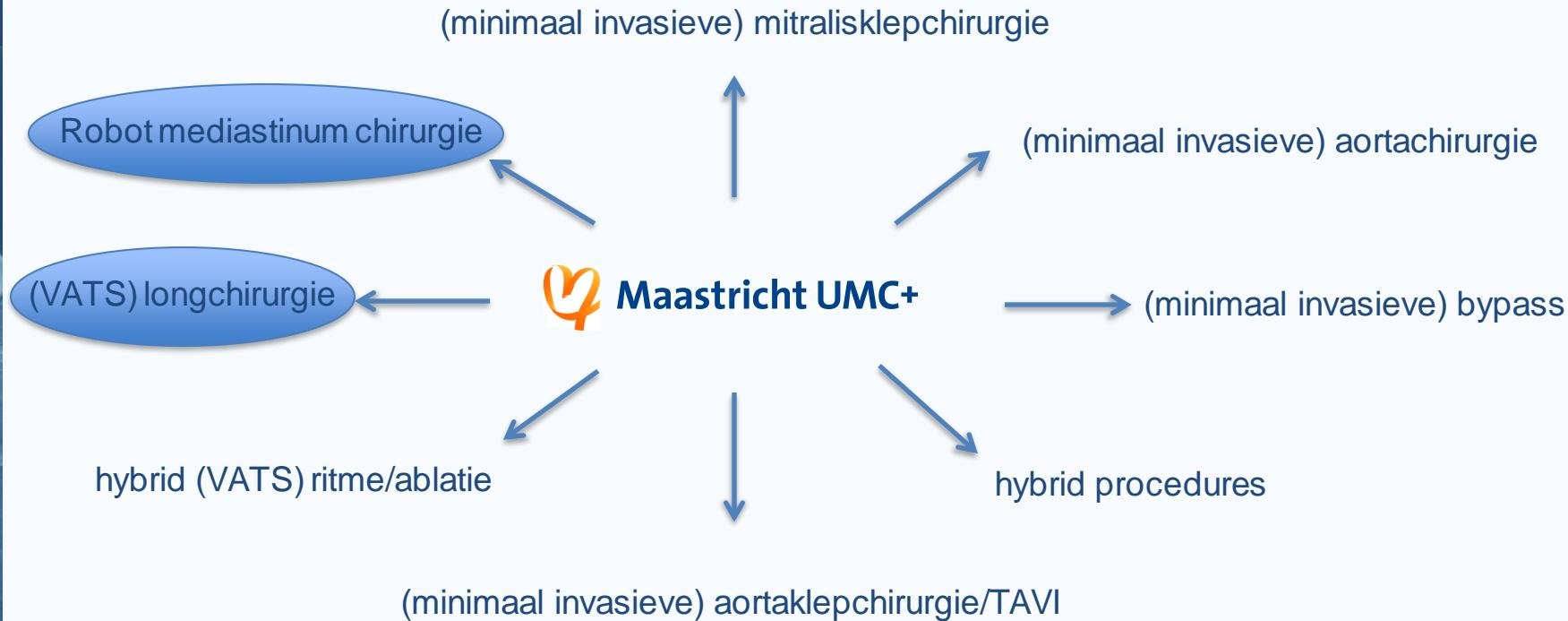
No conflict of interest

P.Segers, MD, PhD



P.Segers, MD, PhD





Indicatie

- Kwaadaardig
 - Primair longkanker
 - Niet kleincellig longcarcinoom
 - (Kleincellig longcarcinoom)
 - Uitzaaingen (Metastase)
- Goedaardig



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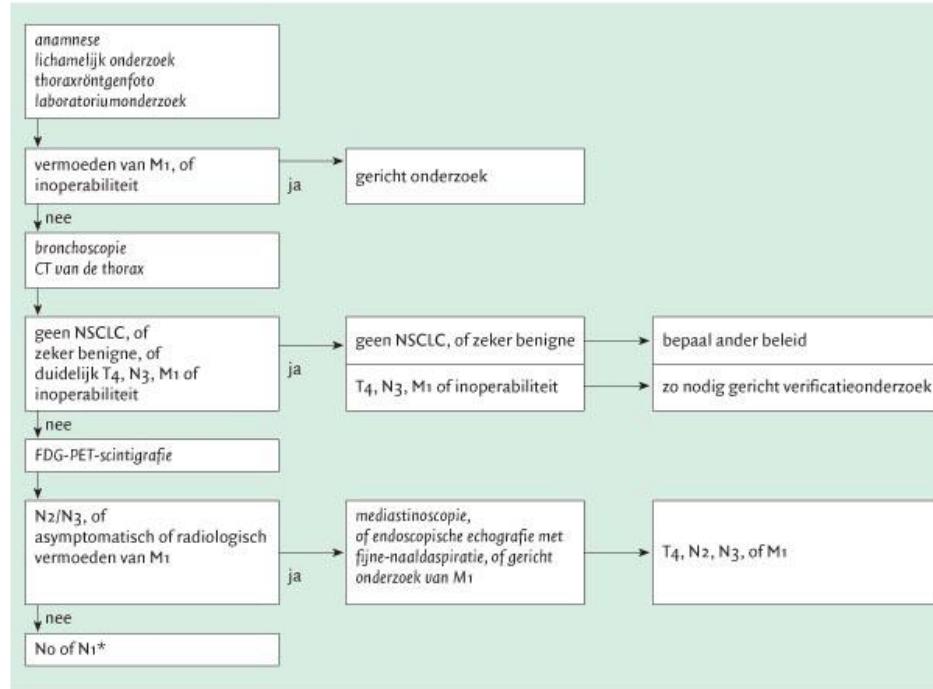
Indicatie

- Kwaadaardig
- Goedaardig

=> door longarts en MDO longkanker

- Longarts
- Longchirurg
- Radiotherapeut
- Radioloog
- Patholoog

=> Behandelstrategie (shared decision making)

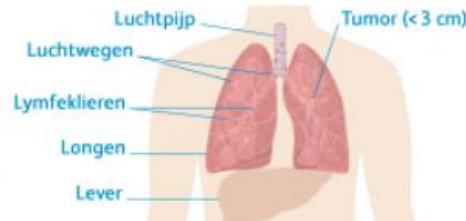


FIGUUR 1. Stroomdiagram met aanbevolen diagnostiek en stadiëring bij patiënten met aanwijzingen voor longkanker; FDG-PET = ¹⁸F-fluorodeoxyglucose-positronemissietomografie; (*) op voorwaarde dat de primaire tumor zelf FDG opneemt en niet tegen het mediastinum aan ligt. Verificatieonderzoek van beeldafwijkingen kan noodzakelijk zijn om de diagnostische zekerheid te vergroten.

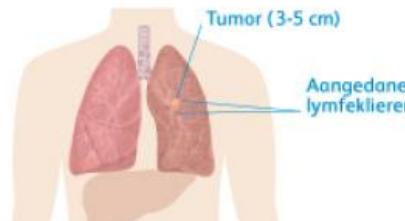
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TNM 8 th - Primary tumor characteristics	
T_x	Tumor in sputum/bronchial washings but not be assessed in imaging or bronchoscopy
T₀	No evidence of tumor
T_{is}	Carcinoma in situ
T₁	≤ 3 cm surrounded by lung/visceral pleura, not involving main bronchus
T_{1a(mi)}	Minimally invasive carcinoma
T_{1a}	≤ 1 cm
T_{1b}	> 1 to ≤ 2 cm
T_{1c}	> 2 to ≤ 3 cm
T₂	> 3 to ≤ 5 cm <i>or</i> involvement of main bronchus without carina, regardless of distance from carina or invasion visceral pleural or atelectasis or post obstructive pneumonitis extending to hilum
T_{2a}	>3 to ≤4cm
T_{2b}	>4 to ≤5cm
T₃	>5 to ≤7cm in greatest dimension <i>or</i> tumor of any size that involves chest wall, pericardium, phrenic nerve or satellite nodules in the same lobe
T₄	> 7cm in greatest dimension <i>or</i> any tumor with invasion of mediastinum, diaphragm , heart, great vessels, recurrent laryngeal nerve, carina, trachea, oesophagus, spine <i>or</i> separate tumor in different lobe of ipsilateral lung
N₁	Ipsilateral peribronchial and/or hilar nodes and intrapulmonary nodes
2	Ipsilateral mediastinal and/or subcarinal nodes
3	Contralateral mediastinal or hilar; ipsilateral/contralateral scalene/ supraclavicular
M₁	Distant metastasis
M_{1a}	Tumor in contralateral lung or pleural/pericardial nodule/malignant effusion
M_{1b}	Single extrathoracic metastasis, including single non-regional lymphnode
M_{1c}	Multiple extrathoracic metastases in one or more organs

4 stadia van longkanker



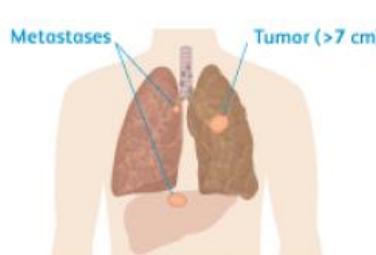
Stadium 1



Stadium 2

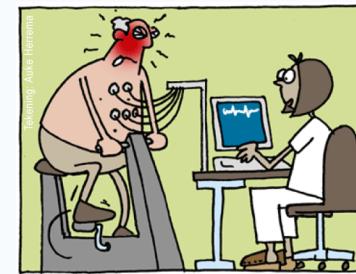
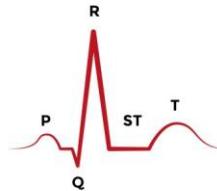


Stadium 3



Stadium 4

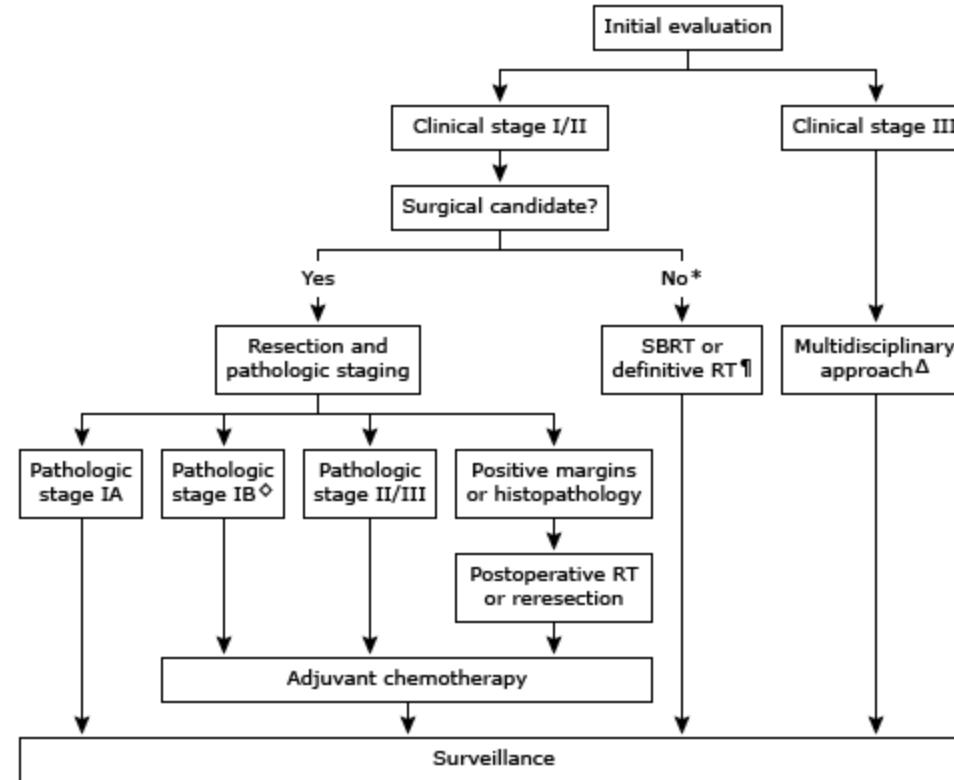
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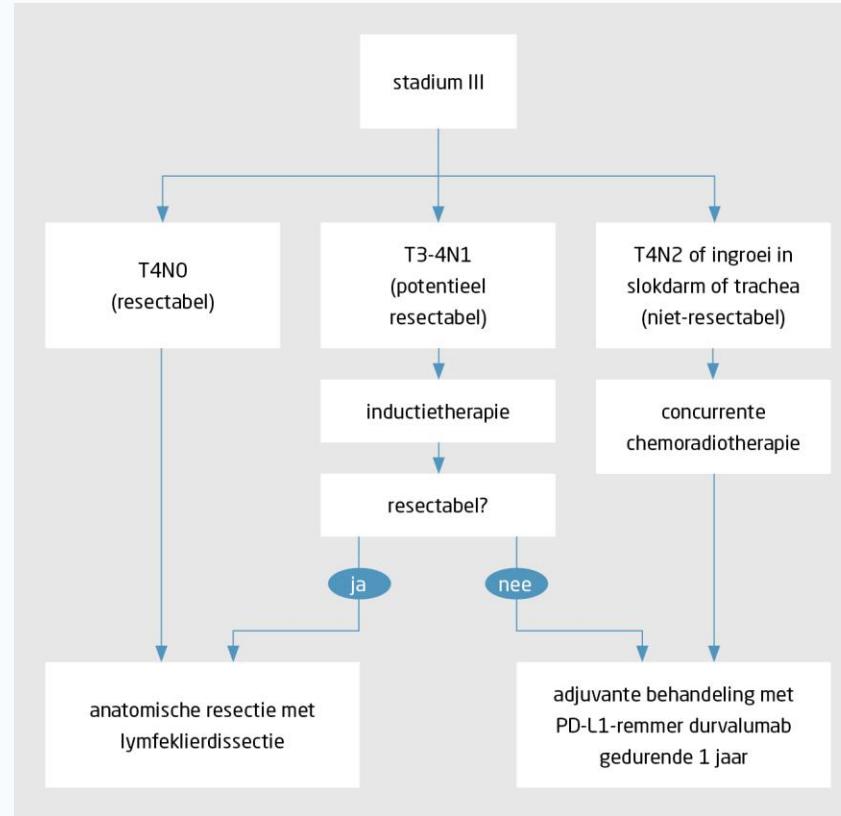
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Wie?

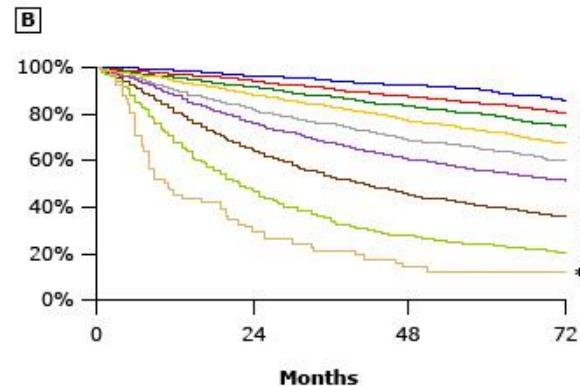
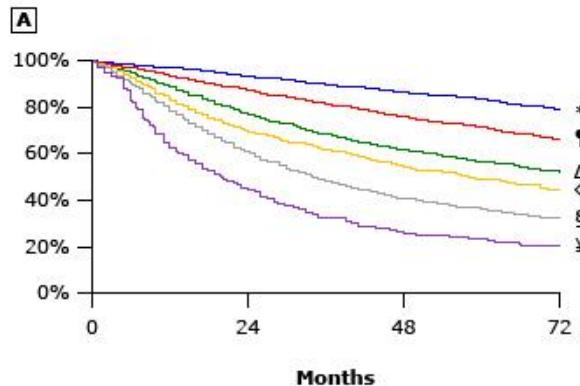
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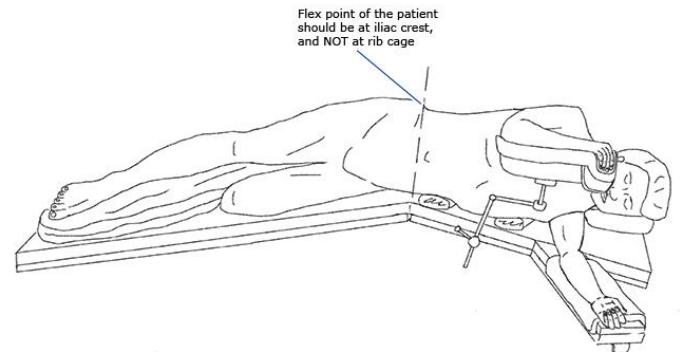
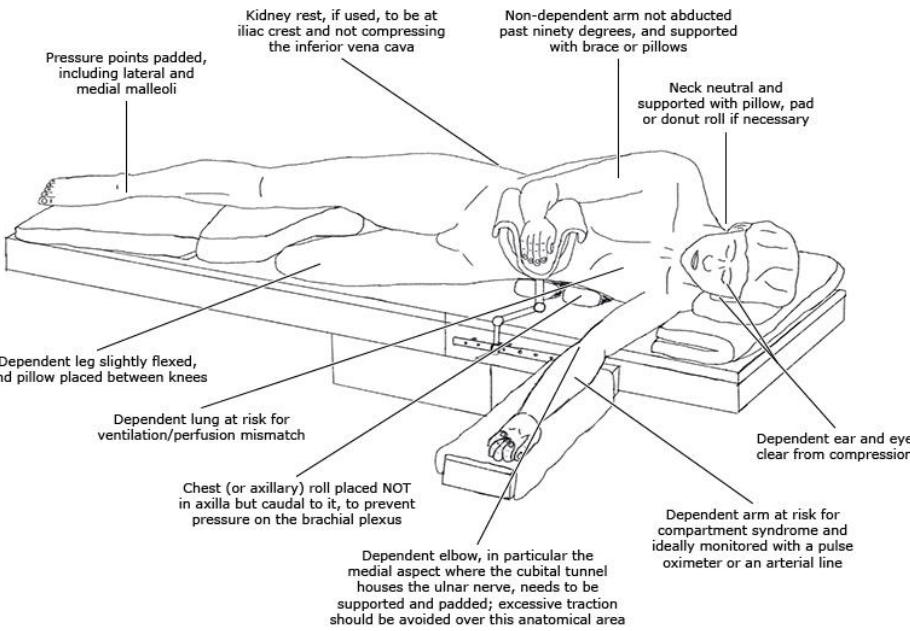
7 th edition	Events / N	MST	24 month	60 month
* IA	1837 / 11,423	NR	94%	83%
¶ IB	2168 / 7711	NR	87%	71%
Δ IIA	1514 / 3702	NR	77%	57%
◊ IIB	1325 / 2776	58.9	70%	49%
§ IIIA	3467 / 5818	35.0	61%	36%
¥ IIIB	364 / 506	20.0	45%	23%

8 th edition	Events / N	MST	24 month	60 month
* IA1	139 / 1389	NR	97%	90%
¶ IA2	823 / 5633	NR	94%	85%
Δ IA3	875 / 4401	NR	92%	80%
◊ IB	1618 / 6095	NR	89%	73%
§ IIA	556 / 1638	NR	82%	65%
¥ IIB	2175 / 5226	NR	76%	56%
‡ IIIA	3219 / 5756	41.9	65%	41%
† IIIB	1215 / 1729	22.0	47%	24%
** IIIC	55 / 69	11.0	30%	12%

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Hoe?

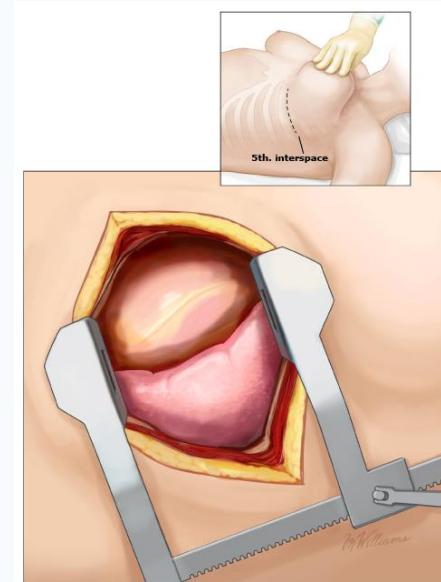
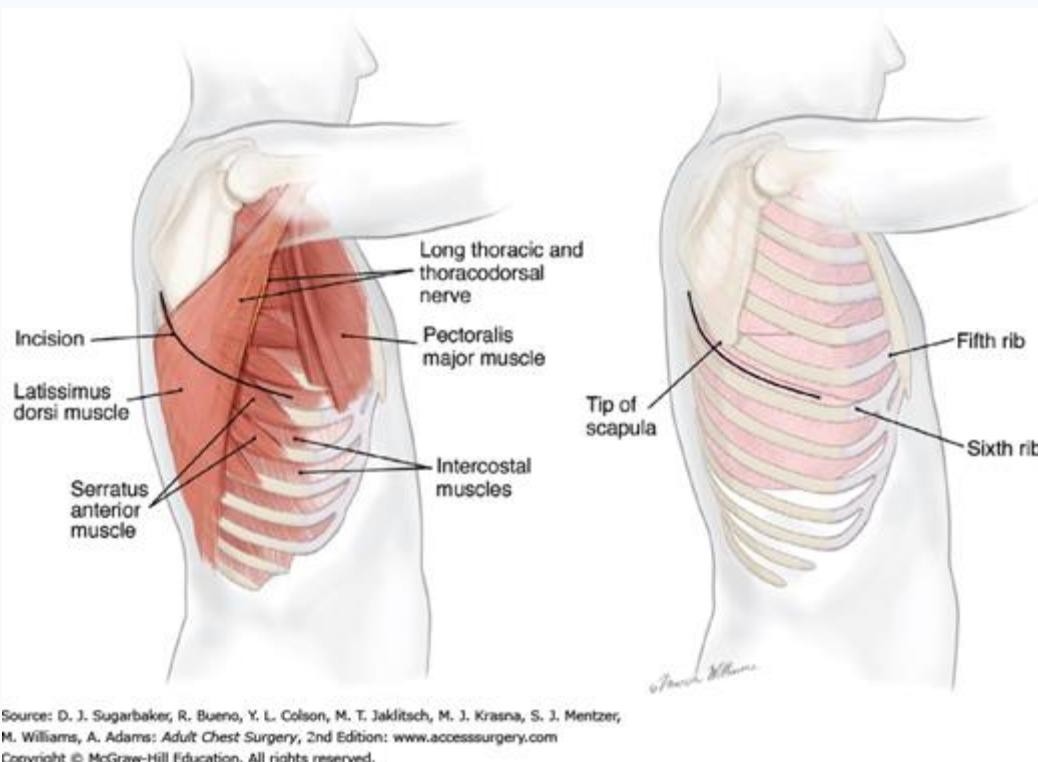
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Thoracotomy

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Thoracotomie

=> Spiersparend

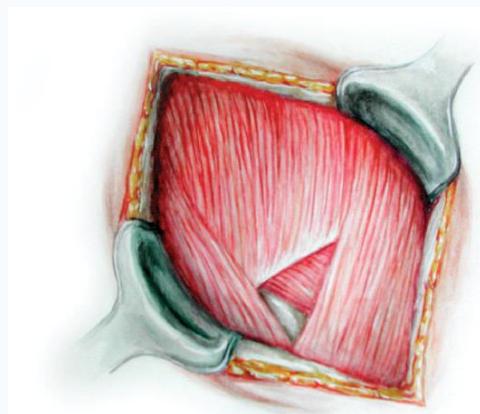


fig. 2 – Auscultatory triangle exposure

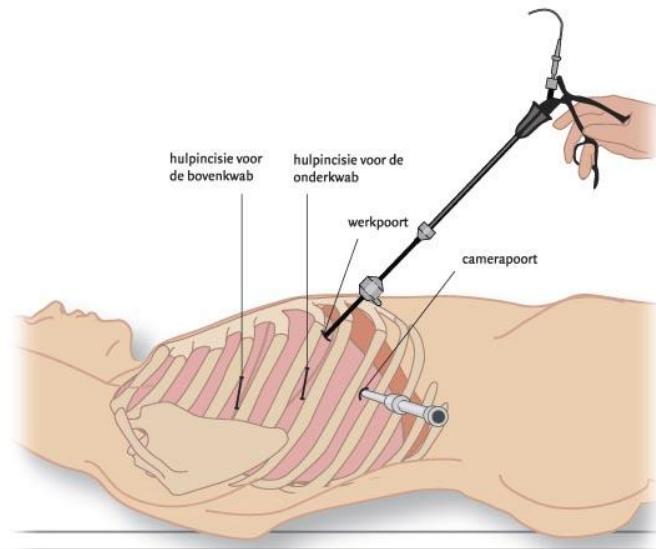


fig. 3 – Auscultatory triangle – the muscles are drawn and the

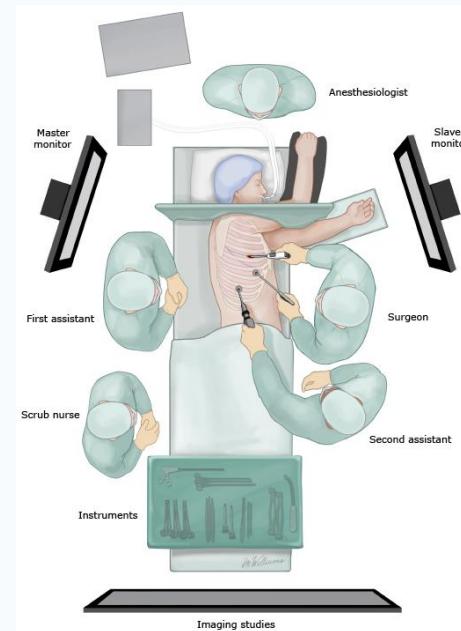


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VATS: Video Assisted Thoracoscopic Surgery



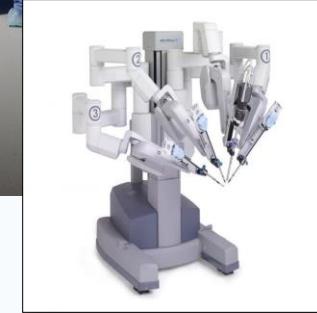
FIGUUR 1. Schematische weergave van de toegangspoorten en hulpincisie die gebruikt worden bij het uitvoeren van een lobectomie met complete videogeassisteerde thoracoscopische chirurgie (c-VATS).



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RATS: Robot Assisted Thoracoscopic Surgery

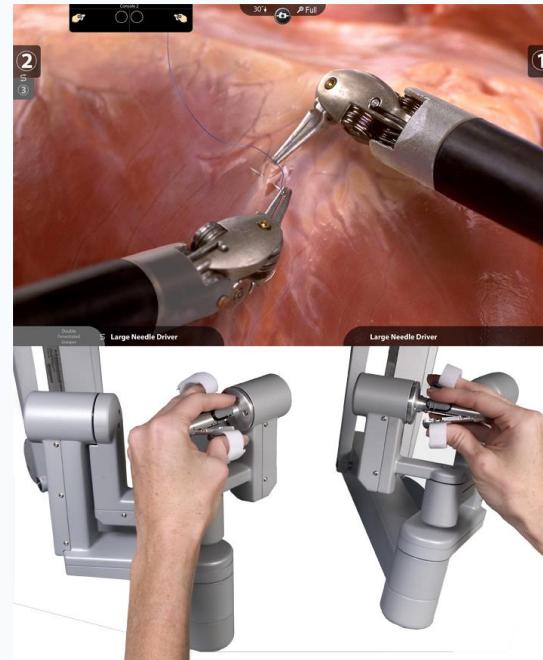
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Robot Chirurgie:

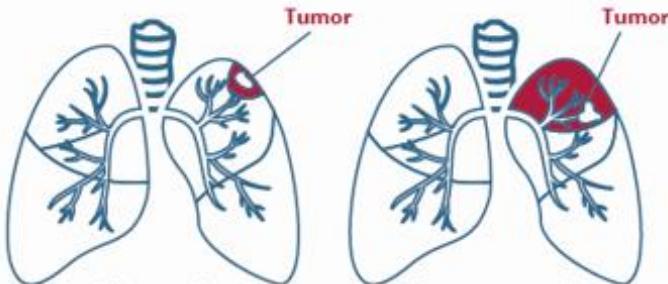
- Minimaal Invasieve Chirurgie
- Range-of-Motion; ergonomie
- Onvermoeibaar/tremor
- Precies/Stabiel
- 3D
- Kwantitatieve informatie/Onderwijs
-



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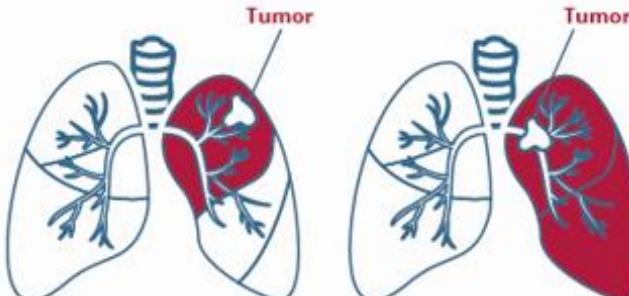
Wat?

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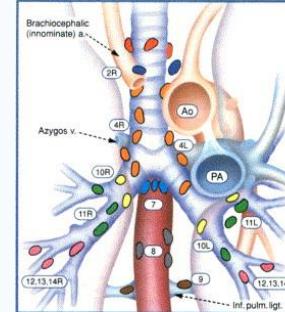
Wigresectie
Hierbij wordt een klein stukje longweefsel verwijderd

Segmentresectie
Hierbij wordt één of enkele segmenten (delen) van de longkwal verwijderd



Lobectomie
Hierbij wordt de longkwal verwijderd

Pneumonectomie
Hierbij wordt de gehele long verwijderd

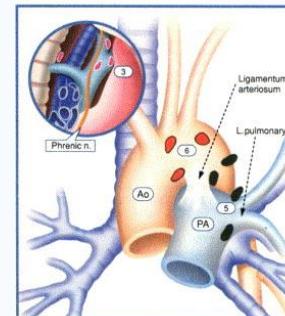


Superior Mediastinal Nodes

- 1 Highest Mediastinal
 - 2 Upper Paratracheal
 - 3 Pre-vascular and Retrotracheal
 - 4 Lower Paratracheal (including Azygous Nodes)
- N_i = single digit, ipsilateral
N_j = single digit, contralateral or supraclavicular

Aortic Nodes

- 5 Subaortic (A-P window)
- 6 Para-aortic (ascending aorta or phrenic)



Inferior Mediastinal Nodes

- 7 Subcarinal
- 8 Paraesophageal (below carina)
- 9 Pulmonary Ligament

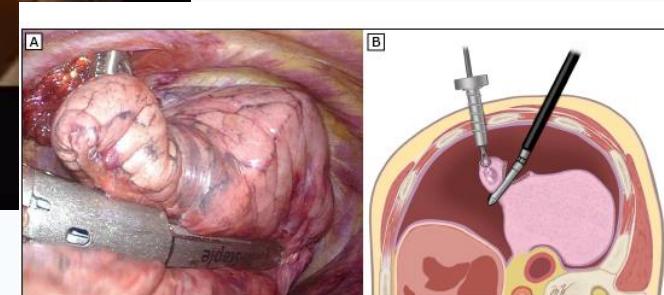
N_i Nodes

- 10 Hilar
- 11 Interlobar
- 12 Lobar
- 13 Segmental
- 14 Subsegmental

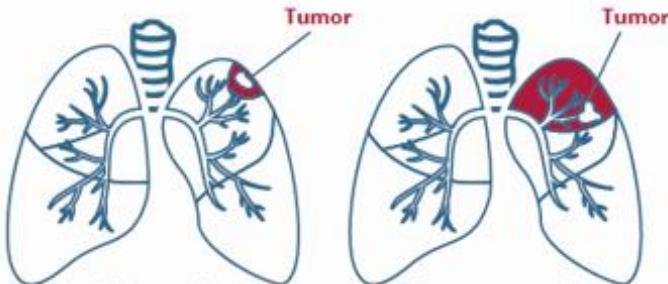
(Mountain/Drester modifications from Harms/ATS-LCSG Map)

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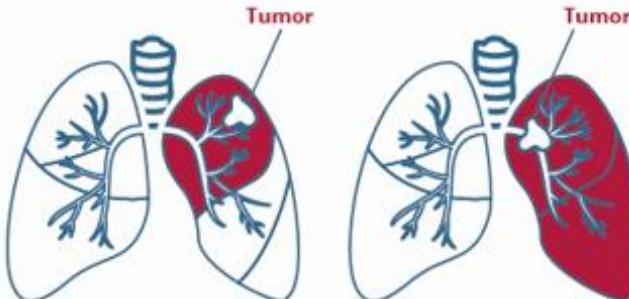


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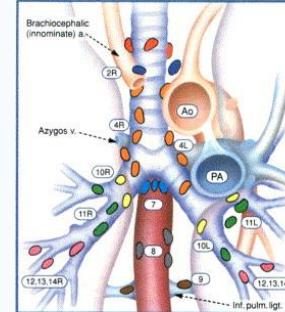
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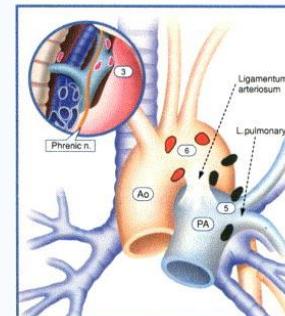


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N_i Nodes

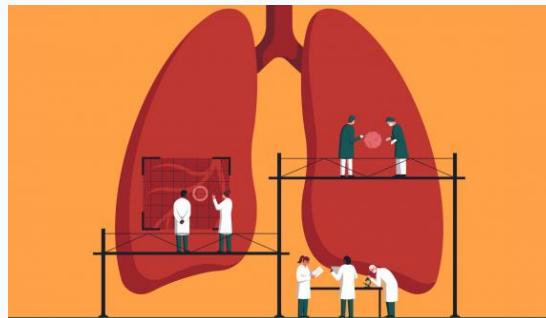
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- 14 Subsegmental

(Mountain/Drester modifications from Harms/ATS-LCSG Map)

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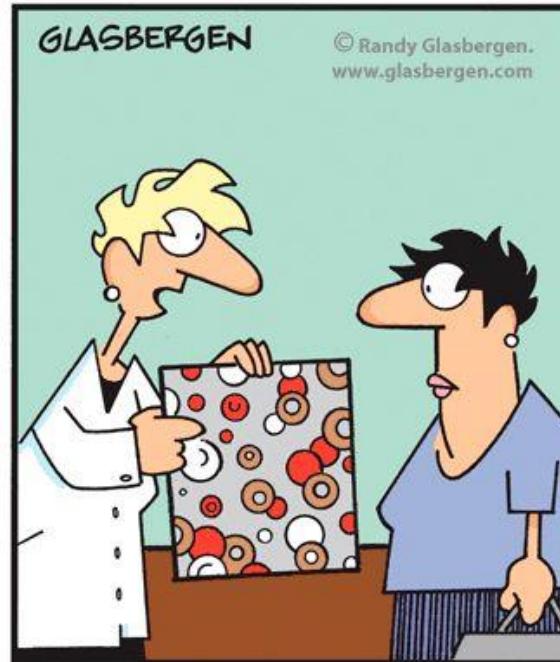
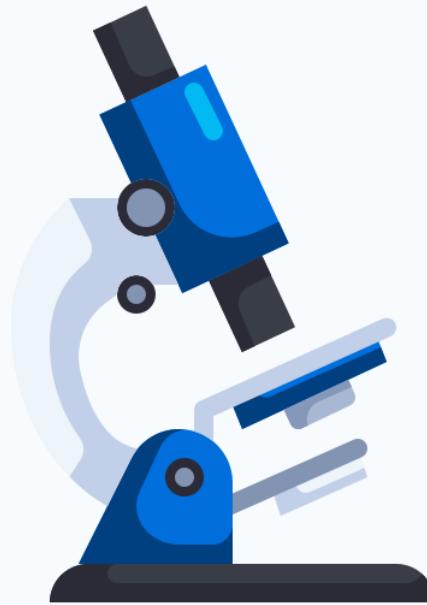
Na de operatie



Zuurstof-Pijnstilling-Drain-Mobiliseren/Ademhaling

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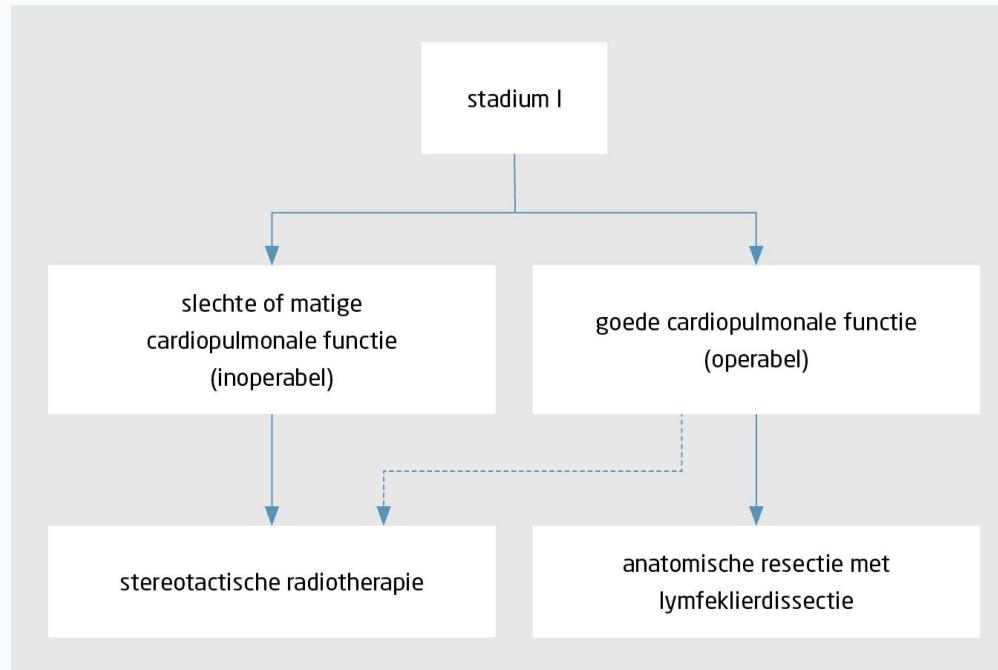
Ondertussen



**"The red circles are your red blood cells.
The white circles are your white blood cells.
The brown circles are donuts. We need to talk."**

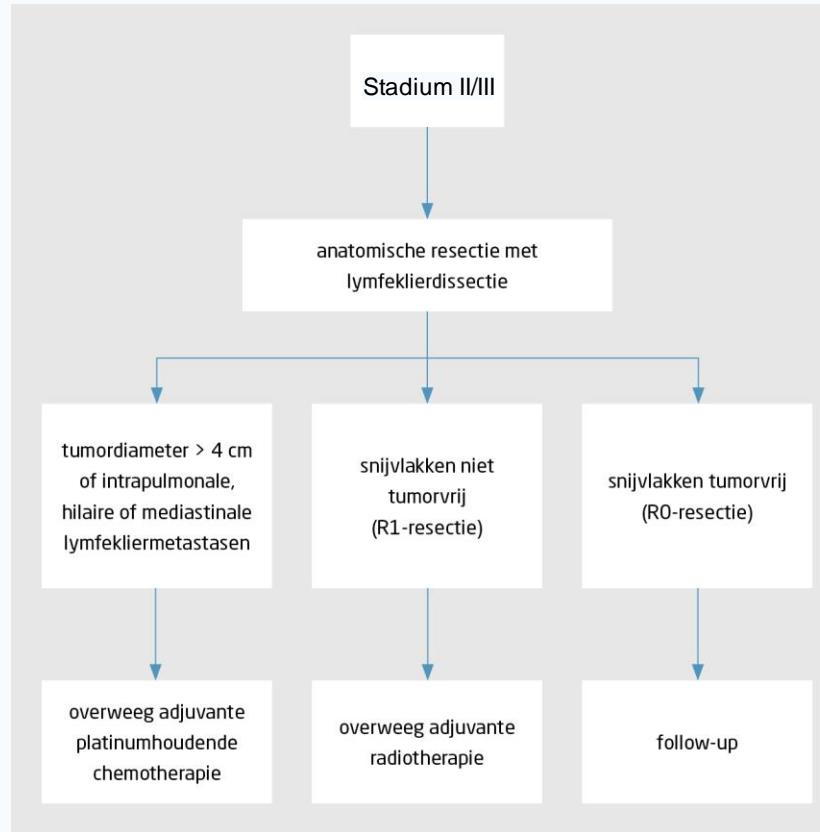
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En dan?



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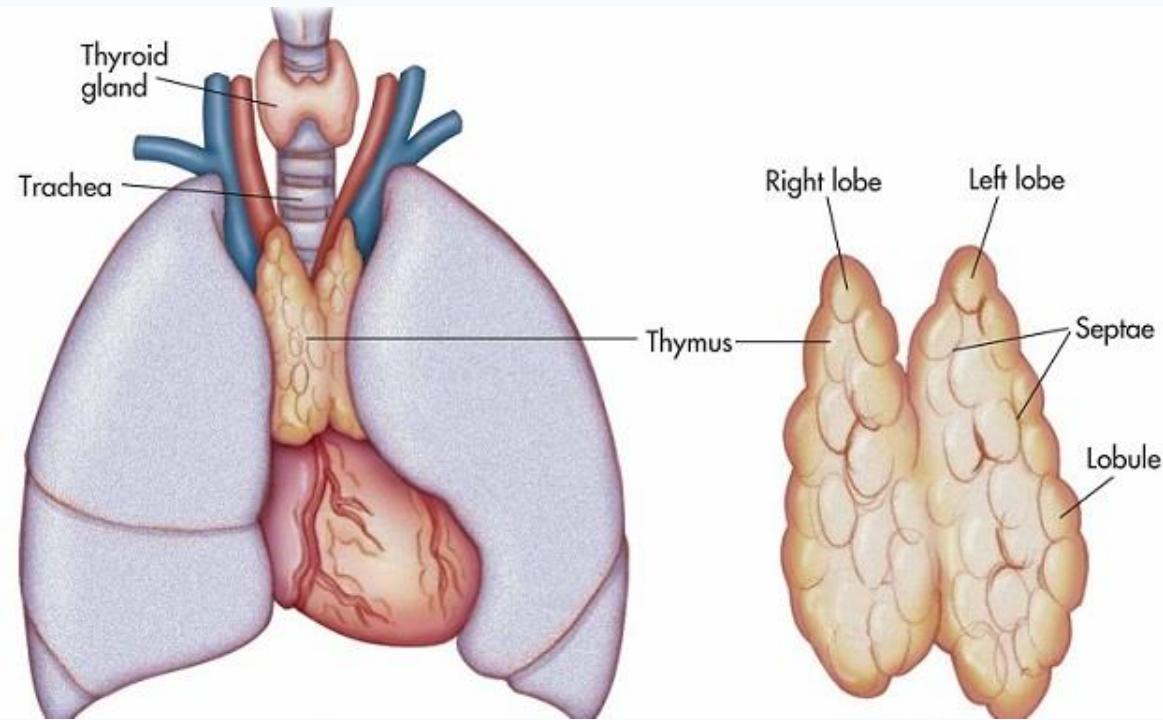
En dan?



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Indicatie

- Thymus/Zwezerik
 - Goedaardig
 - Kwaadaardig



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Myasthenia Gravis

Neuromusculaire auto-immune ziekte

leeftijd:

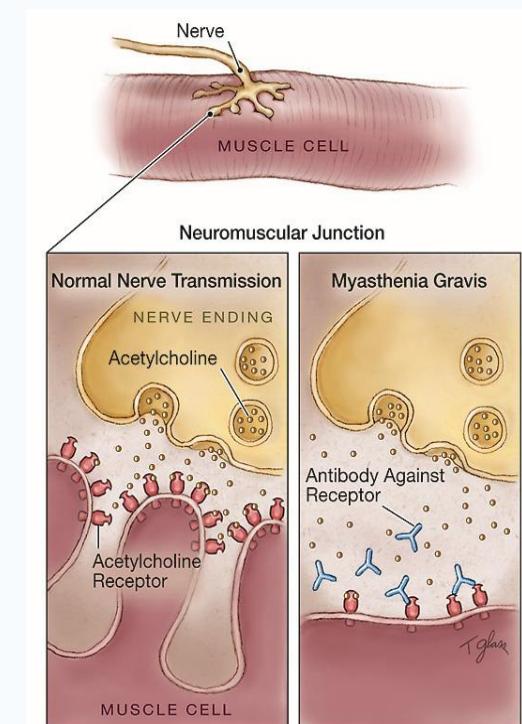
Vroeg: 20-40 j (♀)

Laat: 60-80 j (♂ > ♀)



Symptomen

- Oog (15%): ptosis, dubbelzien
- Gegeneraliseerd (85%):
 - Bulbar symptomen: spraak, slikken, kauwen
 - Spierzwakte ledematen
 - Zwakte ademhalingsspieren



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Indications

- Thymus
 - Goedaardig: myastenia gravis
 - Kwaadaardig
 - Thymoom +/- myastenia gravis
 - Thymuscarcinoma +/- myastenia gravis

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Robot thymectomies in Maastricht

Center of expertise Nederland

>350 (start 2004)

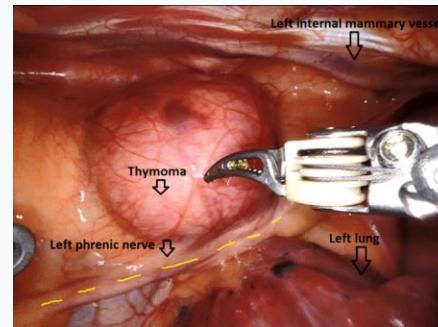
Groepen:

1. Thymoom - Myasthenia Gravis (11%)
2. Thymoom + Myasthenia Gravis (24%)
3. Myasthenia Gravis (65%)

Leeftijd: 10-88 j (<>: 42j)

Operatietijd: 44-413 min (<>: 132 min)

Opname: 3 dagen



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Vragen?

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